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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,485	03/29/2001	Kenneth Sullivan	EMC2-093PUS	5488

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DALY, CROWLEY & MOFFORD, LLP
SUITE 101
275 TURNPIKE STREET
CANTON, MA 02021-2310

EXAMINER

HUYNH, KIM T

ART UNIT	PAPER NUMBER
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2112

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/821,485

Applicant(s)

SULLIVAN ET AL.

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 6-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuccio et al. (US Patent 6,289,401) in view of Sne et al. (US Patent 5,890,207)

As per claim 6, Tuccio discloses a data storage system wherein a host computer is coupled to a bank of disk drives through an interface, such interface comprising:

- A plurality of directors; (fig.1a, 20)
- A bus;(fig.7, ie, top bus, bottom bus)
- A memory connected to the directors through the bus; (col.2, lines 21-23)
- Wherein the directors control data transfer between the host computer and the bank of disk drives as such data passes through the memory; (col.2, lines 9-13)
- A plurality of adapters, a front end portion of the directors being coupled between the host computer and the bus through the adapter boards; (col.4, lines 37-42)
- Wherein each one of such adapter boards includes:

- A plurality of adapter board ports each one being coupled to a corresponding port of the host computer; (col.7, line 48-col.8, line 16)
- A plurality of adapter board gate arrays; (col.2, lines 18-24)
- A plurality of optic interfaces, each one of the optic interfaces being coupled between a corresponding one of the adapter board ports and a corresponding one of the adapter board gate arrays, each one of the coupled optic interfaces and adapted board gate arrays providing a corresponding one of a plurality of channels for the data; (col.2, lines 18-38)
- Wherein each adapter board also comprises:
 - A plurality of adapter board CPUs, each one being coupled to the adapter board gate arrays and the optic interface of a corresponding one of the channels, each one of the CPUs controlling the initiation and termination of the data passing through said corresponding one of the channels; (col.2, lines 5-27)

Tuccio discloses all the limitations as above except ESCON adapter and Wherein each one of the front end portion of the director boards includes a plurality of director board gate arrays and a plurality of EDACs; and Wherein each pair of the director board gate arrays is coupled between a corresponding pair of the adapter board gate arrays and a corresponding one of the EDACs. However, Sne

discloses the data is received by the director in the DPR full/first buffer section is available to assemble/disassemble gate arrays. The gate arrays decodes the code lines for the pipe and asserts the pointer to the DPR. The lower machine is responsible for asserting the control logic that will allow the DPR to send the buffered data and pass-through the EDAC to check this data. (col.27, line 17-col.28,line 56)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Sne's teaching into Tuccio's system so as to have the integrated cache storage devices and more particularly to a high performance integrated cache storage device for high speed, high reliability and high availability data storage. (col.1, lines 5-9)

As per claim 7, Tuccio discloses a plurality of director board CPUs each one is coupled to a corresponding one of the adapter board CPUs, each one of the director board CPUs being coupled to a corresponding one of the director board gate arrays to control the initiation and termination of a data transfer through such coupled one of the director gate arrays. (col.2, lines 5-27)

As per claim 8, Sne discloses the system including a common state machine coupled to the plurality of director board gate arrays coupled to the corresponding one of the EDACs for access to such corresponding one of the EDACs. (col.27, line 17-col.28,line 56)

As per claim 9, Sne discloses wherein each one of the directors comprises a plurality of dual port RAMs, each one being coupled to a corresponding one of the EDACs and to the bus; a second common state machine coupled to the first common state machine and the plurality of dual port RAMs for arbitrating between the plurality of dual port RAMS for access to the bus. (col.28, lines 20-55)

Response to Amendment

3. Applicant's amendment filed on 1/15/04 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

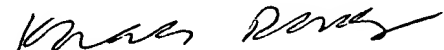
4. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM- 6:30PM.*

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.

Kim Huynh

April 2, 2004



Khanh Dang
Primary Examiner